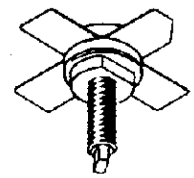
SGS-THOMSON MICROELECTRONICS

SD1275

RF & MICROWAVE TRANSISTORS
VHF MOBILE APPLICATIONS

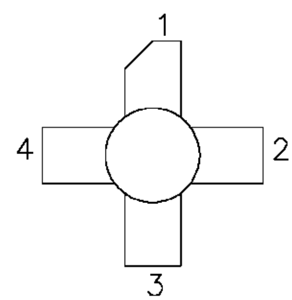
- 160 MHz
- 13.6 VOLTS
- COMMON EMITTER
- P_{OUT} = 40 W MIN. WITH 9.0 dB GAIN



.380 4L STUD (M135)
epoxy sealed

ORDER CODE	BRANDING
SD1275	SD1275

PIN CONNECTION



1. Collector
2. Base
3. Emitter
4. Base

DESCRIPTION

The SD1275 is a 13.6 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. The SD1275 utilizes an emitter ballasted die geometry to withstand severe load mismatch conditions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	16	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	8.0	A
P_{DISS}	Power Dissipation	70	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

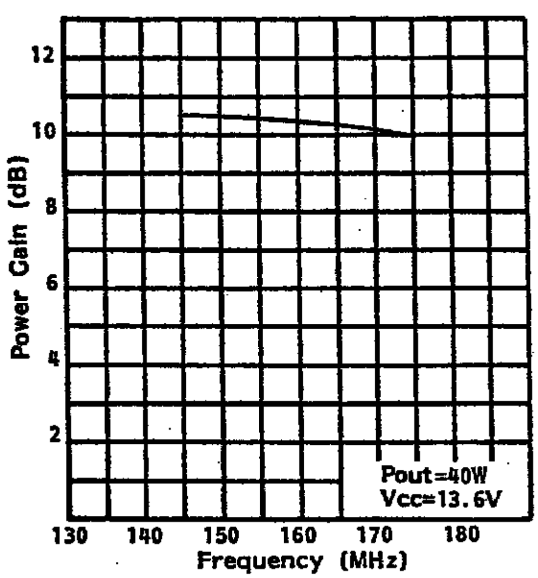
Symbol	Test Conditions		Value Min.	Value Typ.	Value Max.	Unit
BV_{CES}	I_C = 15mA	V_{BE} = 0mA	36	—	—	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	16	—	—	V
BV_{EBO}	I_E = 5mA	I_C = 0mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15V	I_E = 0mA	—	—	5	mA
h_{FE}	V_{CE} = 5V	I_C = 250mA	20	—	—	—

DYNAMIC

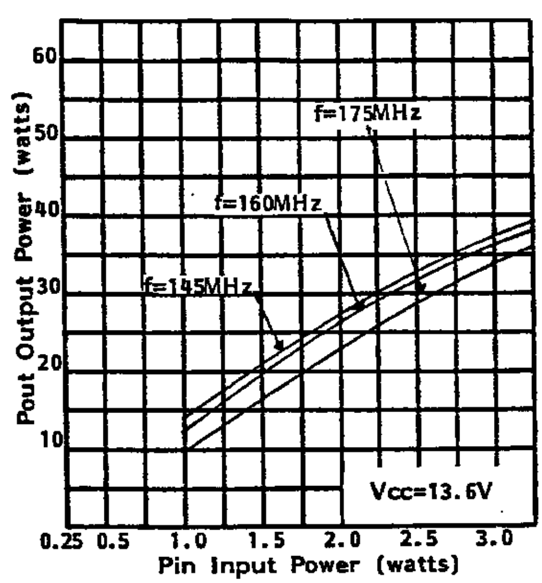
Symbol	Test Conditions			Value Min.	Value Typ.	Value Max.	Unit
P_{OUT}	f = 160 MHz	P_{IN} = 5.0 W	V_{CE} = 13.6 V	40	—	—	W
G_P	f = 160 MHz	P_{IN} = 5.0 W	V_{CE} = 13.6 V	9	—	—	dB
C_{OB}	f = 1 MHz	V_{CB} = 15 V		—	95	—	pF

TYPICAL PERFORMANCE

POWER GAIN vs FREQUENCY

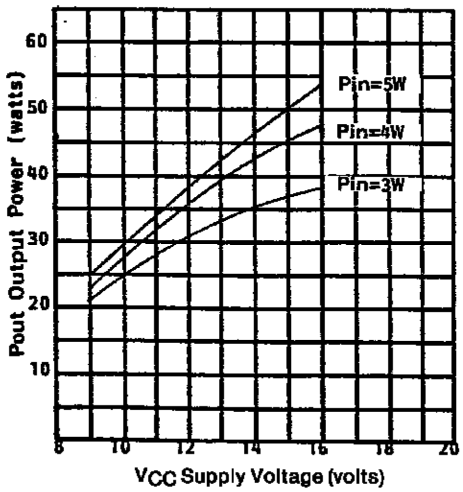


POWER OUTPUT vs POWER INPUT

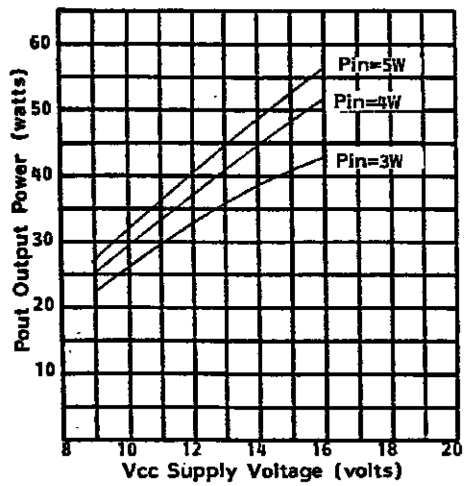


TYPICAL PERFORMANCE (cont'd)

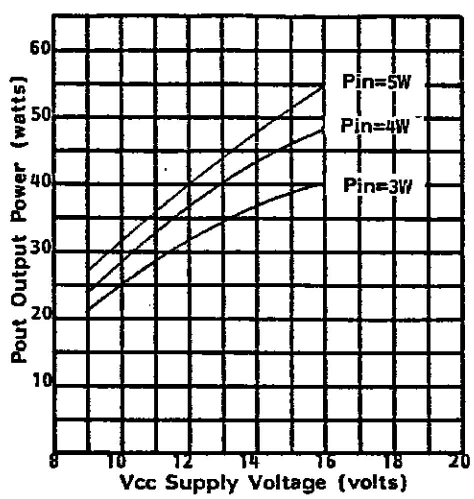
POWER OUTPUT vs SUPPLY VOLTAGE (175 MHz)



POWER OUTPUT vs SUPPLY VOLTAGE (145 MHz)



POWER OUTPUT vs SUPPLY VOLTAGE (160 MHz)



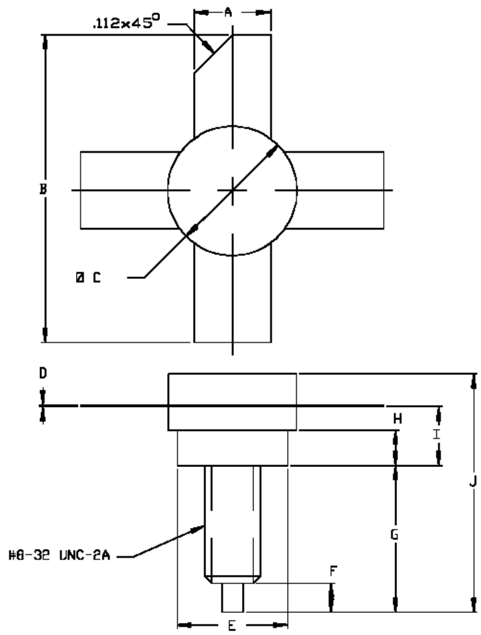
IMPEDANCE DATA

FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
160 MHz	1.0 + j 0.4	2.3 + j 0.1

P_{IN} = 3.0 W
V_{CE} = 12.5 V

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0135



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.980/24,89	
C	.370/9,40	.385/9,78
D	.004/0,10	.007/0,18
E	.320/8,13	.330/8,38
F	.100/2,54	.130/3,30
G	.450/11,43	.490/12,45
H	.090/2.29	.100/2.54
I	.155/3,94	.175/4,45
J		.750/19,05

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